

COMMONWEALTH OF PENNSYLVANIA

DEPARTMENT OF INTERNAL AFFAIRS
James F. Woodward, Secretary

BUREAU OF TOPOGRAPHIC AND GEOLOGICAL SURVEY
George H. Ashley, State Geologist

COAL RESERVES IN WESTMORELAND COUNTY, PENNSYLVANIA

By

John F. Reese

Introduction.

In connection with the "Introduction to the Bituminous Coal Fields of Pennsylvania" now being prepared for publication by the Pennsylvania Geological Survey, coal reserves of the bituminous fields are being computed by Mr. John F. Reese. In order to render this information available at once without waiting for the uncertain date of printing the report, an abstract of Mr. Reese's figures for Westmoreland County is given herewith. All of the information readily available at this time has been used in the computation, which followed the methods used by the Land Classification Board of the United States Geological Survey in its valuation of the public coal lands. The results are given by beds for each township. For some beds and for some areas the data are abundant and the results entirely reliable. For other beds and areas the data are meager and the results subject to revision as additional data are obtained. All the data used and the computation sheets are permanently filed so that modifications of the original figures can be made readily when required by additional information.

The figures presented are preliminary and subject to correction for any area when that area shall be studied in detail. In the meantime critical examination of the figures is invited in order that the results may be made as accurate as possible. To that end the Survey will welcome every bit of information not now in its possession. Records of drillings and other data will be kept strictly confidential if so desired, although the Bureau naturally prefers to be able to use data freely.

P 38.12

2.4

George H. Ashley.

Coal Beds.

Westmoreland County has six coal beds that are now of economic interest. In order of present importance as shipping coals they are the Pittsburgh, Upper Freeport, Redstone, Lower Kittanning, Middle Kittanning, and Waynesburg.

Pittsburgh Coal. The great development of this bed, and numerous exposures of its outcrop have furnished many reliable measurements of the thickness, thus making possible an accurate and reliable computation of the quantity of coal contained in this bed. No information is available as to the size of mined-out areas in some localities. For these places an estimate of probable depletion has been made, based on age and size of operation, or on the difference between original areas and statements of acreages remaining unmined.

Upper Freeport Coal. This bed contains the greatest reserve within the county. The extensive development of this coal along the Kiskiminitas and Allegheny rivers, the outcrop throughout the county, and drill hole records, have furnished a fair number of detailed measurements of its thickness. From data available, a fairly accurate map of this bed has been made showing the extent of the thick Freeport coal; the large faulted area in the central and western part of the county; and the local faults along the Kiskiminitas River.

Because of approaching exhaustion of the Pittsburgh coal, this bed will be first in economic importance within a few years.

Redstone Coal. This bed has been computed as of economic value in five townships. A fair number of measurements from its outcrop and from several mines have made possible a fairly accurate estimate of the tonnage. A low percentage of recovery has been assumed for this bed, because when the Pittsburgh coal has been mined, the intervening rocks will cave, thus breaking this bed and making recovery of this coal both difficult and costly.

Lower Kittanning Coal. This bed has been computed and considered as of economic importance in five townships, all lying east of Chestnut Ridge. A fair number of measurements are available from its outcrop, from mines along the Conemaugh River. Available drill-hole records show this coal to be extremely variable in thickness and of no economic value west of Chestnut Ridge.

Middle Kittanning Coal. Drill-hole records show this coal to be fairly persistent and of fair thickness in the western part of the county. An average thickness of 3 feet has been used in eight townships where its existence has been established. A recoverable percentage of only 50 per cent has been assumed for this bed, because of meager data regarding its thickness and continuity.

Waynesburg Coal. A fair number of measurements have been gathered from the outcrop of this coal, and from its development. It has been considered and computed as of importance in Hempfield and Sewickley townships. This bed is broken by many partings, is variable

in section, and in places is under shallow cover. For these reasons, a low percentage of recovery has been used in figuring the mineable tonnage.

This coal is mined for domestic use in many places because it is readily accessible.

Other coal beds are mined for local use, but as they are not important, and little is known of their extent and thickness, they have not been included in the computation of the reserves.

Method of Computing Reserves.

A base map for each coal bed was made by tracing its outcrop from the quadrangle maps made by the U. S. Geological Survey. All available measurements of a coal bed, gathered from Federal and State reports, mine maps, core drill records and personal inspections, were plotted on the map of that coal bed at the locality represented. By studying the distribution of the figures, areas of equal thickness were plotted, and by means of a planimeter, an instrument for measuring plane areas, the area of each coal bed in each township was measured. The unit used for calculating the quantity of coal was 90,000 short tons per inch of bed per square mile of area.

Worked-out areas were determined from mine maps and plotted to scale on the base maps. The same method as above was used for computing the quantity of coal extracted.

Having calculated the quantity of coal originally contained within the area of any bed and subtracted the quantity already mined out, the writer determined from engineering experience the probable percentage of each bed which could be recovered in different localities. This varies from 50 to 90 per cent, depending on the thickness and character of the bed. The quantity of coal computed to be in any bed, multiplied by the assumed percentage of recovery, less 15 per cent for loss in mining, gives the estimated recoverable tonnage.

Coal Reserves.

The total area of Westmoreland County is 1062.6 square miles.

The result of computing the coal reserves in Westmoreland County based on the latest maps, engineering data, and methods is shown in the accompanying tables.

One table gives the estimated recoverable tonnage by beds and townships. The figures have been given as computed. It should however be distinctly understood that while the acreage of each of the beds has been accurately computed, the reliability of the average thickness of the coals used in the computation of tonnage decreases for the beds in the order following: Pittsburgh, Upper Freeport, Redstone, Waynesburg, Lower Kittanning, and Middle Kittanning. Thus, while the figures for the Pittsburgh bed are conservative and probably reliable, the figures for the Middle Kittanning coal may be much



Digitized by the Internet Archive
in 2016 with funding from

This project is made possible by a grant from the Institute of Museum and Library Services as administered by the Pennsylvania Department of Education through the Office of Commonwealth Libraries

too small or many times too large.

Detailed tables of the coal reserves in each township have been prepared and will appear in printed form in the report now being written on the bituminous coal fields of the State. They can be consulted in the office of the Survey; or figures for a single township will be sent on request.

Coal Reserves in Westmoreland County in Short Tons

Bed	Original Deposit	Mined Out	Recoverable
Pittsburgh	1,872,540,000	1,167,687,000	538,300,000
Upper Freeport	2,732,598,000	45,378,000	1,859,200,000
Redstone	324,900,000	2,970,000	163,200,000
Lower Kittanning	729,000,000	972,000	431,700,000
Middle Kittanning	706,644,000	324,000	297,500,000
Waynesburg	15,822,000	810,000	7,600,000
Total	6,381,504,000	1,218,141,000	3,297,500,000

Summary of Recoverable Coal in Westmoreland County in Short Tons

Twp.	Pittsburgh	U.Freeport	Redstone	L.Kittanning	M.Kittanning	Waynesburg	Total
Allegheny	---	62,400,000	---	---	42,500,000	---	104,900,000
Bell	5,000,000	58,300,000	---	---	---	---	63,300,000
Cook	---	67,400,000	---	76,900,000	---	---	144,300,000
Derry	30,400,000	205,700,000	---	---	---	---	236,100,000
Donegal	---	63,300,000	---	63,500,000	---	---	126,800,000
E.Huntingdon	23,100,000	100,600,000	---	---	---	---	123,700,000
Fairfield	5,300,000	124,400,000	---	96,300,000	---	---	226,000,000
Franklin	12,800,000	9,300,000	---	---	---	---	74,100,000
Hempfield	62,000,000	163,000,000	10,700,000	---	52,000,000	2,000,000	237,700,000
Ligonier	5,300,000	156,000,000	---	154,000,000	---	---	315,300,000
Lower Burrell	---	5,200,000	---	---	23,000,000	---	28,200,000
Loyalhanna	9,200,000	66,000,000	---	---	---	---	75,200,000
Mt. Pleasant	55,300,000	111,000,000	---	---	---	---	166,300,000
N. Huntingdon	22,900,000	14,000,000	10,000,000	---	40,000,000	---	86,900,000
Penn	43,800,000	---	---	---	48,000,000	---	91,800,000
Rostraver	62,700,000	114,500,000	65,000,000	---	---	---	241,700,000
St. Clair	---	59,000,000	---	41,000,000	---	---	100,000,000
Salem	35,900,000	33,600,000	---	---	---	---	69,500,000
Sewickley	46,900,000	83,000,000	45,000,000	---	39,000,000	5,600,000	219,500,000
S. Huntingdon	53,900,000	112,000,000	32,500,000	---	---	---	198,400,000
Unity	62,800,000	117,000,000	---	---	---	---	179,800,000
Upper Burrell	---	53,000,000	---	---	21,600,000	---	74,000,000
Washington	1,000,000	81,000,000	---	---	32,000,000	---	114,000,000
Total	538,300,000	1,859,200,000	163,200,000	431,700,000	297,500,000	7,600,000	3,297,500,000

